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ABSTRACT

The selective learning hypothesis holds that individuals' learning of prose passages will be affected in varying ways by the passages' threatening or unpleasant content. To test this hypothesis, 19 college students read six prose passages--three containing threatening material and three nonthreatening--and then completed a cloze test for each passage. The results showed no significant difference in the students' learning of the two types of content. (FL)

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Selective Learning of Prose Passages Due to Aggressive Content

by

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Selective Learning of Prose Passages Due to

Aggression Content

I. Introduction

Today I'm going to describe a test of the selective learning hypothesis. This hypothesis states that "people's learning for verbal materials will be affected in varying ways by the material's threatening or unpleasant content." In other words, if you present a story about murder and you present a story about mashed potatoes, people will learn the story about murder differently because of its threat.

This area has been studied for at least 70 years, and the first thing I'll discuss is the history of the hypothesis. The second thing I'll discuss is the methodological difficulty of studying the area, and the third and last thing I'll discuss is the present experiment.

II. History of the Hypothesis

A. Origin. The first selective learning experiments in this country began in the 1910's and by 1930, roughly 30 studies were reviewed in a paper by Meltzer. Typically, in these experiments, an experimenter presented some threatening verbal materials--usually threatening words in word lists, and also presented some matched non-threatening materials, to participants. The experimenters then tested if the learning of participants would be influenced by the threatening content of the stimuli.

Early experimenters identified this selective learning research as a test of Freud's theory of repression. They had some justification in this. In Freud's Psychopathology of Everyday Life, he refers to written material which, because of some inputation or content, may be learned less well or forgotten.

In other words, Freud theorized that some written material could be kept out of consciousness because of the unacceptable sexual or aggressive instinctual drives it called forth. In the Interpretation of Dreams and elsewhere, Freud postulated many intervening mechanisms which would bring about this response.

In the 1950's, researchers split over whether the laboratory selective learning experiment is an adequate or reasonable test of repression. That debate has continued to the present, with articles by Zeller in 1950, Holmes in 1974, and Erdelyi in 1979. But I'm going to concentrate in this paper only on measurement of the selective learning behavior itself, and not on its implications for various personality theories.

III. Methodological Review

A. Results. Up to now, I have not mentioned the results of these studies. Perhaps you have anticipated, even if you are not familiar with the area, that the results are mixed. Several experimenters and reviewers have made attempts to come to terms with these mixed results. Zeller, for instance, in his excellent 1950 review of the area, suggested that differing results may be due to the differing age, sex, socioeconomic status, and so forth, of the participants involved in these experiments.

While this is possible, I believe it is more likely that differences in experimental design may cause differing results. At first glance, the area seems simple enough to research in. All one need do, is get some participants and show them verbal stimuli with threatening content, and verbal stimuli without it, and check for differences in learning the stimuli. Its been done many times. There are several problems with this, however. Let us say that the experiment is conducted and threatening verbal materials are learned less well. Many attributes of the words aside from threatening content may be causing the

differences in learning. For instance, have the words been equated on frequency of occurence? Have they been equated in imagery, meaningfulness, and so on? All of these attributes influence retention. Further, Underwood demonstrated that relationships between each word and all the other words in a list effects learning (1949). And, if words are combined into prose passages, problems of equating become even more complex.

The question might be raised as to whether there is a better design which can be used to answer the research question.

B. Individual differences. The answer, suggested as early as 1930 by Meltzer, is to look at individual differences. Say a threatening and non-threatening word list are given to people. Say, also, that some people learn the non-threatening list best, while other people show a statistically significant opposite learning. When one finds a result such as this, it is clear that there are differences among the people. This is the case whether or not the stimuli are equated on attributes other than threat, because with the same stimuli, equated or not, differences are found among the people. Of course it may be possible, though less likely, that individual differences are in response to other formal attributes. But they should exist, if threat has an effect.

Historically, individual differences have been measured by coming up with a simple difference score for an individual. The score on a person's learning the threatening material is subtracted from their score on learning the non-threatening material to create a difference score. The intent is that this difference score represents the difference in learning due to aggressive content in the words. This resulting difference score is then correlated with an independent personality attribute thought related to selective learning. Now, in many respects this approach appears to be a superior procedure because

equating of stimuli becomes relatively unimportant.

The only difficulty one might get into is mathematical. It is well known that difference scores are often unreliable measures. When they are reliable, they often represent variance of the single scores which make them up, and little of the variance of the true difference itself. Thus, it should not be surprising that difference studies by Eriksen, Smith, Holzberg, McReynolds and Ullman, and others report mixed results.

A precaution against spurious results, which has not been reported previously, is to check whether learning for the threatening and non-threatening material is equivalent, that is, if the true scores have a correlation of 1.0. The equation for the reliability of difference scores states that, other things being equal, as the correlation between the two learning measures rises, the reliability of the resulting difference score goes down. In the extreme case, if the two tests correlate 1.0, the reliability of the difference between them equals 0. This makes intuitive sense in that, when the correlation between two tests is 1.0, the two tests are measuring the exact same thing, and there is no detectable difference between them to make a score out of.

IV. Present Experiment

In the present experiment, I expected that the selective learning truly existed, and that the effect needed to be ferretted out. Stimuli used in this case were prose passages. Artifactual results would be avoided by the use of a preliminary check for equivalence of learning for the two stimuli sets.

A. Selection of prose passages. Prose passage sets were selected from relatively unfamiliar literature. At first, I judged each set as being composed of one non-threatening and one aggressive passage between 190 and 250 words in length. Each passage in a set was written by the same author or taken

from a magazine such as "Newsweek" with a highly consistent style. Each passage was adapted to a 200-word framework so that is was coherent and easy to read. It was accented for aggressive material if it was aggressive. Or, it was toned down in threat if it was non-threatening. Names and locations were changed in the stories so they would be unrecognizeable to anyone who may by chance have read them before. After this procedure, four passage sets were chosen by the experimenter on the basis of the coherence of the writing, as adapted to the 200-word framework.

B. Passage ratings. Each passage was rated by three clinical psychology graduate students at Case Western Reserve University on both their aggressive content, and their threatening content. Detailed instructions were given, and raters used a 5-point scale to rate the materials. Agreement among the raters was quite high. Correlations between the three raters across the eight passages ranged from .92 to .95 on aggression and from .77 to .98 on threat.

In fact, the non-threatening passages had a mean rating on aggressivity of 1.4 on a 5-point scale, with the high passage rating being 1.8. Aggressive passages, on the other hand, had a mean rating on aggressivity of 4.4, with the low passage rating being 4.3 on this 5-point scale.

C. Passage procedure. One passage set was eliminated due to its difficulty, and the remaining three passage sets of six prose passages were ready to be used in a test of the selective learning hypothesis. Learning was assessed using the "Cloze" procedure, a technique developed by Taylor in the 1950's which operates in this manner. You present a passage, first in its complete form, for people to learn. After a study period, you take away this complete passage. Then, you present a second copy of the passage, but this time with certain words deleted, and see how many of these deleted words a person can supply. For each passage, every third word was deleted, with dif-

ferent starting points. The cloze procedure has been found to be correlated roughly in the .80's with other tests of comprehension.

D. Participants. Nineteen students from Case Western Reserve University were presented with these six passages, and instructions to learn them. After they studied each passage for 3 minutes, they were given 7 minutes to complete the cloze test of learning.

E. Results. Responses to the cloze test were recorded item by item so that some measures of internal consistency of the tests could be taken. Percentage recall was 64% of the aggressive passages and 67% of the non-threatening passages. That yields a difference in recall of 3% which was not statistically significant.

It turned out that the correlation between the summed aggressive and the summed non-threatening tests was .93, with a 95% confidence interval from .82 to .97.

An alternative scoring procedure was also used. In this alternative method, certain items were not scored that had been guessed by another group of participants who had never before seen the complete passages. Using this selective scoring procedure, the intercorrelation actually rose to .97. This second scoring procedure was rather informal and I wouldn't want to put too much emphasis on it.

Let's go back to the first correlation of .93. That is the estimated population correlation for the prediction of learning of aggressive prose passages from non-threatening prose passages. But that's using unreliable measures. What might the intercorrelation be between learning for aggressive and non-threatening passages with perfectly reliable measures? To find out, the correlation was corrected for attenuation due to unreliable measures. Once the .93 correlation was corrected for the unreliable measures which make it up,

the best estimate of it is .99. This corrected correlation has a 95% confidence interval from .92 to 1.00.

In other words, the best estimate of the intercorrelation between these two tests is .99, or, that they are equivalent, within sampling variation.

This would strongly imply that there are no individual differences in learning in response to aggressive content in prose passages. That is, learning for prose passages seems unaffected by aggressive content. We know this because performance on aggressive prose passages can be predicted almost exactly from performance on non-threatening passages. And when that is the case, there can be no reliable individual differences between them.

V. Summary

The selective learning hypothesis states that people's learning of verbal stimuli may be affected by threatening content of such verbal material. Six prose passages, three aggressive and three non-threatening, were shown to people. A previously unused, but more accurate statistical approach was used to analyze the data. The best estimate was that learning for the two different types of stimuli was equivalent within sampling variation.

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